

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

EMC CORPORATION, EMC)	
INTERNATIONAL COMPANY, and EMC)	
INFORMATION SYSTEMS)	
INTERNATIONAL,)	
)	
Plaintiffs,)	
)	
v.)	C.A. No. 13-1985-RGA
)	
PURE STORAGE, INC.,)	
)	
Defendant.)	

**OPENING BRIEF IN SUPPORT OF DEFENDANT PURE STORAGE, INC.'S
MOTION FOR JUDGMENT AS A MATTER OF LAW OR,
IN THE ALTERNATIVE, FOR A NEW TRIAL**

OF COUNSEL:
Robert A. Van Nest
Matthew Werdegarr
R. Adam Lauridsen
Corey Johanningmeier
David W. Rizk
KEKER & VAN NEST LLP
633 Battery Street
San Francisco, CA 94111
(415) 391-5400

Joseph FitzGerald
PURE STORAGE, INC.
650 Castro Street, Suite 400
Mountain View, CA 94041
(650) 318-6589

John W. Shaw (No. 3362)
David M. Fry (No. 5486)
SHAW KELLER LLP
300 Delaware Ave., Suite 1120
Wilmington, DE 19801
(302) 298-0700
jshaw@shawkeller.com
dfry@shawkeller.com
Attorneys for Defendant Pure Storage, Inc.

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TABLE OF CONTENTS

TABLE OF AUTHORITIES	ii
I. NATURE AND STAGE OF THE PROCEEDINGS	1
II. SUMMARY OF ARGUMENT AND STATEMENT OF FACTS	1
III. LEGAL STANDARDS	2
IV. ARGUMENT	2
A. Pure is entitled to judgment as a matter of law that the Sun patent anticipates the '015 patent.....	2
1. The jury's verdict that the Sun patent is not prior art to the '015 patent is not supported by legally sufficient evidence	2
a. Inventor testimony concerning conception must be corroborated by independent evidence	3
b. Dr. Li's testimony cannot establish prior conception because his testimony was not corroborated by independent evidence	5
2. There is no evidence, independent or otherwise, establishing complete conception of every element prior to March 22, 2002, as required	8
3. The Sun patent anticipates all asserted claims of the '015 patent.....	9
a. The Sun patent discloses all of the elements of independent claims 1, 15 and 16	10
b. The Sun patent discloses all of the elements of dependent claims 2 and 7	13
B. In the alternative, Pure is entitled to new trial on the issue of whether the Sun patent anticipates and invalidates the '015 patent.....	14
C. Pure is entitled to judgment as a matter of law that Venti anticipates	15
D. Pure is entitled to judgment as a matter of law that Moulton anticipates	19
V. CONCLUSION.....	20

TABLE OF AUTHORITIES

Cases

<i>Allergan, Inc. v. Apotex Inc.</i> , 754 F.3d 952 (Fed. Cir. 2014)	15
<i>Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.</i> , 796 F.2d 443 (Fed. Cir. 1986)	2
<i>Belden Techs. Inc. v. Superior Essex Commc’ns LP</i> , 802 F. Supp. 2d 555 (D. Del. 2011).....	2
<i>Broadcom Corp. v. Emulex Corp.</i> , 732 F.3d 1325 (Fed. Cir. 2013)	12
<i>Brown v. Barbacid</i> , 276 F.3d 1327 (Fed. Cir. 2002)	<i>passim</i>
<i>Burroughs Wellcome Co. v. Barr Labs., Inc.</i> , 40 F.3d 1223 (Fed. Cir. 1994)	3
<i>ClearValue, Inc. v. Pearl River Polymers, Inc.</i> , 668 F.3d 1340 (Fed. Cir. 2012)	2
<i>Coleman v. Dines</i> , 754 F.2d 353 (Fed. Cir. 1985)	3, 6, 8
<i>Intellectual Ventures I, LLC v. Motorola Mobility, LLC</i> , 13 F. Supp. 3d 369 (D. Del. 2014).....	8
<i>Invista N. Am. S.A.R.L. v. M & G USA Corp.</i> , 35 F. Supp. 3d 583 (D. Del. 2014).....	2
<i>Kenexa Brassring, Inc. v. Taleo Corp.</i> , 751 F. Supp. 2d 735 (D. Del. 2010).....	7
<i>Krippelz v. Ford Motor Co.</i> , 667 F.3d 1261 (Fed. Cir. 2012)	11, 14, 17, 20
<i>Mahurkar v. C.R. Bard, Inc.</i> , 79 F.3d 1572 (Fed. Cir. 1996)	3, 4, 6
<i>Medichem S.A. v. Rolabo</i> , 437 F.3d 1157 (Fed. Cir. 2006)	4, 6
<i>Purdue Pharma L.P. v. Boehringer Ingelheim GMBH</i> , 237 F.3d 1359 (Fed. Cir. 2001)	3, 15

<i>Shu-Hui Chen v. Bouchard</i> , 347 F.3d 1299 (Fed. Cir. 2003)	3
<i>Singh v. Brake</i> , 222 F.3d 1362 (Fed. Cir. 2000)	4
<i>State Contracting & Eng’g Corp. v. Condotte Am., Inc.</i> , 346 F.3d 1057 (Fed. Cir. 2003)	12
<i>Stern v. Trs. of Columbia Univ.</i> , 434 F.3d 1375 (Fed. Cir. 2006)	4
<i>Transocean Offshore Deepwater Drilling, Inc. v. GlobalSantaFe Corp.</i> 443 F. Supp. 2d 836 (S.D. Tex. 2006)	4, 7, 8, 9

Statutes

35 U.S.C. § 102	15, 19
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Rules

Fed. R. Civ. P. 50	2, 14, 20
Fed. R. Civ. P. 59	14, 20

I. NATURE AND STAGE OF THE PROCEEDINGS

EMC¹ filed this action against Pure² on November 23, 2013, alleging infringement of U.S. Patent Nos. 7,434,015, 7,373,464, 6,904,556, 6,915,475 and 8,375,187. EMC subsequently withdrew its assertion of the '475 patent, and on February 11, 2016 the Court granted summary judgment of non-infringement of the '187 patent, and infringement of certain claims of the '015 patent. *See* D.I. 388. Following a seven-day trial, on March 15, 2016, the jury found that Pure did not infringe the '464 or '556 patents and that the '015 patent was valid, found that EMC was not entitled to lost profits, and awarded EMC reasonable royalty damages for infringement of the '015 patent. *See* D.I. 453. The Court entered Judgment on March 17, 2016. *See* D.I. 456.

II. SUMMARY OF ARGUMENT AND STATEMENT OF FACTS

1. The jury's determination that DTX557 ("the Sun patent") is not prior art to the '015 patent is not supported by legally sufficient evidence. EMC failed to offer any independent evidence to corroborate '015 patent co-inventor Dr. Kai Li's oral testimony that he conceived of the inventions claimed in the '015 patent prior to March 22, 2002, the priority date of the Sun patent. And the evidence offered by EMC would be insufficient as a matter of law to sustain a verdict of validity had the jury considered the substance of the Sun patent's disclosures.

2. Alternatively, Pure is entitled to a new trial on anticipation of the '015 patent by the Sun patent. The jury's determination that the '015 patent is not prior art is against the clear weight of the evidence and a new trial must be granted to prevent a miscarriage of justice.

3. Pure also is entitled to judgment as a matter of law that the '015 patent is invalid in light of admitted prior art DTX560 ("Venti") and DTX556 ("Moulton"). Pure presented clear and

¹ "EMC" refers collectively to plaintiffs EMC Corporation, EMC International Company, and EMC Information Systems International.

² "Pure" refers to defendant Pure Storage, Inc.

convincing evidence that Venti and Moulton disclose every element of the asserted claims,³ and EMC's purported evidence is insufficient as a matter of law to sustain a verdict of validity.

4. Alternatively, Pure is entitled to a new trial on anticipation by Venti and the Moulton patent because the jury's determination is against the clear weight of the evidence and a new trial must be granted to prevent a miscarriage of justice.

III. LEGAL STANDARDS

Judgment as a matter of law is appropriate if "the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for [a] party" on an issue. Fed. R. Civ. P. 50(a)(1); *see also ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1344-45 (Fed. Cir. 2012) (applying standard to reverse denial of JMOL of invalidity). The decision to grant a new trial is within the Court's discretion and, unlike judgment as a matter of law, the Court need not view the evidence in the light most favorable to the verdict winner. *See Invista N. Am. S.A.R.L. v. M & G USA Corp.*, 35 F. Supp. 3d 583, 592 (D. Del. 2014). New trials are "commonly granted ... where the jury's verdict is against the clear weight of the evidence, and a new trial must be granted to prevent a miscarriage of justice[.]" *Belden Techs. Inc. v. Superior Essex Commc'ns LP*, 802 F. Supp. 2d 555, 561-62 (D. Del. 2011).

IV. ARGUMENT

A. Pure is entitled to judgment as a matter of law that the Sun patent anticipates the '015 patent.

1. The jury's verdict that the Sun patent is not prior art to the '015 patent is not supported by legally sufficient evidence.

The date of invention of a patent in suit is presumed to be the filing date of the application until an earlier date is proved. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 449 (Fed. Cir. 1986). Here, the application leading to the Sun patent was filed nearly nine months

³ Pure did not argue the Moulton patent anticipates claim 7 of the '015 patent.

before the application that led to the '015 patent. *Compare* DTX557 (March 22, 2002 filing date) with PTX003 (Dec. 20, 2002 filing date). Absent legally sufficient evidence to establish conception of the inventions claimed in the '015 patent before March 22, 2002, the Sun patent is prior art to the '015 patent. *See Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1576-77 (Fed. Cir. 1996).

a. Inventor testimony concerning conception must be corroborated by independent evidence.

“It is well established that when a party seeks to prove conception via the oral testimony of a putative inventor, the party must proffer evidence corroborating that testimony.” *Shu-Hui Chen v. Bouchard*, 347 F.3d 1299, 1309 (Fed. Cir. 2003); *see also Mahurkar*, 79 F.3d at 1577. The law “require[s] corroborating evidence of a contemporaneous disclosure that would enable one skilled in the art to make the invention.” *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227-28 (Fed. Cir. 1994). “[T]he rule provides a bright line for both district courts and the PTO to follow in addressing the difficult issues related to invention dates.” *Mahurkar*, 79 F.3d at 1577.

Whether testimony has been sufficiently corroborated is determined by a “rule of reason” analysis. *Bouchard*, 347 F.3d at 1309. “However, that ‘rule of reason’ analysis does not alter the requirement of corroboration of an inventor’s testimony.” *Id.*; *see also Coleman v. Dines*, 754 F.2d 353, 360 (Fed. Cir. 1985) (“The rule of reason, however, does not dispense with the requirement for some evidence of independent corroboration.”). “The inventor [still] must provide independent corroborating evidence in addition to his own statements and documents.” *Brown v. Barbacid*, 276 F.3d 1327, 1335 (Fed. Cir. 2002) (quoting *Hahn v. Wong*, 892 F.2d 1028, 1032 (Fed. Cir. 1989)).⁴

“Independent corroboration may consist of testimony of a witness, other than the inventor, ... or it

⁴ *See also Procter & Gamble Co. v. Teva Pharm. USA, Inc.*, 566 F.3d 989, 999 (Fed. Cir. 2009) (“[W]hen a party seeks to prove conception via the oral testimony of a putative inventor, the party must proffer ... independent corroborating evidence in addition to [the inventor’s] own statements and documents.” (internal quotations omitted)); *Purdue Pharma L.P. v. Boehringer Ingelheim GMBH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001) (“Where a party seeks to show conception through oral testimony of an inventor, it must produce independent evidence corroborating that testimony.”).

may consist of evidence of surrounding facts and circumstances independent of information received from the inventor.” *Medichem S.A. v. Rolabo*, 437 F.3d 1157, 1169-71 (Fed. Cir. 2006).

While the Federal Circuit has indicated that inventor documents witnessed by others may serve, in combination with other evidence, to corroborate an inventor’s testimony concerning conception, *see, e.g., Singh v. Brake*, 222 F.3d 1362, 1369-70 (Fed. Cir. 2000), it also repeatedly has held that undisclosed and unwitnessed inventor documents by themselves are insufficient to satisfy the independent evidence corroboration requirement. In *Procter & Gamble*, for example, a party sought to prove conception via the oral testimony of the inventor. *See* 566 F.3d at 998. The Federal Circuit held that an unwitnessed entry in an inventor’s laboratory notebook was insufficient to corroborate the inventor’s testimony by the date the inventor claimed. *See id.* at 999. Similarly, in *Brown*, the Federal Circuit held that an “inventor’s own unwitnessed documentation does not corroborate an inventor’s testimony about inventive facts.” 276 F.3d at 1335. The Federal Circuit has never held that unwitnessed inventor documents by themselves are sufficient to corroborate an inventor’s testimony regarding conception. *See, e.g., Transocean Offshore Deepwater Drilling, Inc. v. GlobalSantaFe Corp.*, 443 F. Supp. 2d 836, 856 (S.D. Tex. 2006) (plaintiff “does not cite and the court has not found any authority supporting its contention that the testimony of an inventor together with his own undisclosed and unwitnessed drawings is sufficient to create a genuine issue of material fact as to when conception occurred”).⁵

⁵ In its February 11, 2016 Memorandum Opinion, the Court noted that “[d]ocumentary evidence of conception need not be corroborated.” D.I. 381 at 28. This is because “[t]he trier of fact can conclude for itself what documents show, aided by testimony as to what the exhibit would mean to one skilled in the art.” *Mahurkar*, 79 F.3d at 1577-78. But the fact that corroboration is not necessary to establish what a physical exhibit actually discloses does not mean that unwitnessed, inventor-created documents may corroborate an inventor’s testimony concerning inventive facts, such as the timing of conception. Otherwise, the rule set forth in *Procter & Gamble* and *Brown* that inventor testimony cannot be corroborated by unwitnessed, inventor-created documents would be meaningless. *Cf. Stern v. Trs. of Columbia Univ.*, 434 F.3d 1375 (Fed. Cir. 2006) (“[R]egardless of the contents of the notebooks, unwitnessed laboratory notebooks on their own are insufficient to support his claim [of conception, and therefore] of co-inventorship.”).

b. Dr. Li's testimony cannot establish prior conception because his testimony was not corroborated by independent evidence.

Given the established law of corroboration, the jury was not presented with legally sufficient evidence to find that the Sun patent was not prior art. EMC relied on the testimony of Dr. Li to establish conception prior to the Sun patent, but it did not offer *any independent* evidence to corroborate Dr. Li's inventor testimony, as required by law. EMC's evidence of *the timing* of conception consisted entirely of Dr. Li's testimony concerning four undisclosed, unwitnessed exhibits created and dated only by Dr. Li. EMC's evidence of the date of conception consisted of:

- Dr. Li's testimony concerning when he recalls conceiving of the inventions (which was general in nature, and did not include any particularized testimony regarding the timing of his conception of each element of the asserted claims of the '015 patent). *See* Trial Tr. at 410:17-411:18, 417:13-419:15.
- Dr. Li's testimony concerning when he recalls making various undated, unwitnessed notes on a whiteboard, *see* Trial Tr. at 411:5-15; 420:9-12; 423:18-424:11, and then at some time later photographing them, *see id.* at 420:13-423:24;
- Unwitnessed photographs Dr. Li testified that he took of the undated, unwitnessed whiteboard notes he created. PTX009-11; *see* Trial Tr. at 462:22-463:6.
- An unwitnessed architecture specification document, version 0.11, that Dr. Li testified that he authored and undisputedly is dated *April 3, 2002*—*i.e.*, well after the March 22, 2002 filing date of the Sun patent. PTX008; *see* Trial Tr. at 424:25-425:1.
- Dr. Li's testimony that an earlier version of the unwitnessed architecture specification, version 0.1, which is missing, likely would be similar to version 0.11. *See* Trial Tr. at 427:4-428:17; 455:19-456:12; 458:16-460:5.⁶

EMC did not offer the testimony of *any* witness—independent or otherwise—to corroborate Dr. Li's testimony concerning the date of conception.⁷ Nor did EMC offer any independent

⁶ EMC also moved into evidence several Data Domain technical documents, PTX049-51, 55, 57, 59, 62, 63, 65-68, to support its claim of diligence in reduction to practice. These documents, the earliest of which bears a date of June 25, 2002 (*see* PTX063), cannot corroborate, or independently establish, the date of conception, as they are all months too late, and there is no evidence in the record that these documents were created or witnessed by anyone other than the inventors.

⁷ Notably, the evidentiary record at trial is *less* robust than what was before the Court at summary judgment. In its Memorandum Opinion, the Court noted that “Hugo Patterson, another co-inventor

documents or other physical exhibits to corroborate Dr. Li's testimony—*i.e.*, any documents or exhibits that were not both created and dated by Dr. Li himself. EMC also did not offer any evidence that Dr. Li disclosed his invention to anyone or that anyone witnessed the whiteboard notes or the architecture specification—at any point in time, much less prior to March 22, 2002. EMC's expert, Ian Jestice, the only other witness offered by EMC on the issue of conception, could not possibly corroborate when Dr. Li's whiteboard notes or architecture specifications were written—or when any other inventive work actually was performed as he has no independent knowledge of what was done when and simply relied on Dr. Li's testimony. *See* Trial Tr. at 2015:8-20.

The inventor testimony and inventor-created evidence offered by EMC at trial is insufficient as a matter of law to antedate the Sun patent. There is no evidence that Dr. Li disclosed his invention to anyone at the relevant time. *See Coleman*, 754 F.2d at 359 (“Conception must be proved by corroborating evidence which shows that the inventor disclosed to others his ‘completed thought expressed in such clear terms as to enable those skilled in the art’ to make the invention.”). And the three photographs Dr. Li testified he took cannot corroborate Dr. Li's testimony concerning the date of conception because neither the unwitnessed photographs nor the undated, unwitnessed notes captured in the photographs constitute *independent* evidence. Consequently, because the requirement of independent corroboration is a “bright line” rule, *Mahurkar*, 79 F.3d at 1577, even if Dr. Li's testimony is fully credited, his testimony together with the whiteboard photos is insufficient to establish prior conception. *See Procter & Gamble*, 566 F.3d at 998-99; *Brown*, 276 F.3d at 1335; *see also Medichem*, 437 F.3d at 1171-72 (“Even the most credible inventor testimony is *a fortiori* required to be corroborated by independent evidence”).

of the '015 patent, testified at deposition that Dr. Li and Mr. Zhu developed the core deduplication concepts of the '015 patent before March 2002.” *See* D.I. 381 at 29. However, EMC did not present any testimony concerning conception from Dr. Patterson at trial. *See* Trial Tr. at 1622:5-1628:23.

The fact that Dr. Li's digital photographs include "date taken" metadata does not change this conclusion. Unwitnessed, inventor-created documents are not "independent" for purposes of corroboration simply because they happen to include some machine-generated time or date information. *See, e.g., Kenexa Brassring, Inc. v. Taleo Corp.*, 751 F. Supp. 2d 735, 760-61 (D. Del. 2010) (time stamped source code files failed to provide sufficient independent corroboration of inventor's testimony concerning conception because "[w]hile the source code undoubtedly shows the functionality of the ... product, it is akin to an unwitnessed inventor's notebook. It is evidence, but it is not independent evidence" and "timestamps can be easily modified, even accidentally"); *Transocean*, 443 F. Supp. 2d at 856 (concluding that unwitnessed inventor-created computer drawings were not independent and could not corroborate the date of conception, even though drawings had "last modified date" metadata). Furthermore, even if the law otherwise permitted unwitnessed, inventor-created documents to corroborate inventor testimony based on their metadata, Dr. Li's own testimony regarding when he took the photos and the photos' "metadata" conflict with each other. *See* Trial Tr. at 466:2-469:12. Dr. Li testified that he recalled taking all three photos within a day or two of each other in February 2002, but the metadata for the photos indicates that two of them were taken weeks after the first, in late March 2002. *See id.* at 468:13-470:2. Thus, the metadata does *not* corroborate Dr. Li's testimony, but rather shows, as he admitted on cross-examination, that his testimony could be inaccurate "because any human memory deteriorates over time. I can't remember [in] 2002 exactly what happened."⁸ *Id.* at 469:7-11.

Similarly, there is no independent evidence of what may have been in the March 16, 2002 version 0.1 of the architecture specification, if such a document ever existed, other than Dr. Li's own testimony. The document itself is missing. And EMC did not offer any witness who could

⁸ Dr. Li also testified that he did not know if the date settings on his camera were accurate. *See* Trial Tr. at 463:4-464:9, 465:16-466:6. The camera was never produced for inspection.

corroborate Dr. Li's testimony concerning when the architecture specification was actually prepared and what information it may have contained. EMC also did not offer any witness who could corroborate Dr. Li's testimony concerning Data Domain's policies and practices with respect to the versioning of specification documents—*e.g.*, that there would be only minor differences between a version 0.1 and a version 0.11. Moreover, Dr. Li himself was unsure of what changed in the specification between March 16 and April 3, 2002. *See id.* at 458:16-460:5. Therefore, as a matter of law, the missing March 16, 2002 specification cannot corroborate Dr. Li's testimony. *Cf. Intellectual Ventures I, LLC v. Motorola Mobility, LLC*, 13 F. Supp. 3d 369, 410-11 (D. Del. 2014) (evidence of "the date [that a design presentation] was started, without any evidence as to the content of the presentation at that time, is not sufficient to demonstrate" conception as of that date).

2. There is no evidence, independent or otherwise, establishing complete conception of every element prior to March 22, 2002, as required.

Even if Dr. Li's testimony and the whiteboard photos were sufficient evidence of the date of conception of some elements of the asserted claims of the '015 patent, this evidence does not establish that every element of the asserted claims was conceived prior to March 22, 2002, as required. *See Coleman*, 754 F.2d at 359 ("[I]n establishing conception a party must show possession of every feature recited in the count, and that every limitation of the count must have been known to the inventor at the time of the alleged conception.").⁹

In his testimony, Dr. Li provided only generalized testimony concerning what he invented when; he did not testify as to exactly when he conceived of each element of the asserted claims. *See* Trial Tr. at 410:17-411:22, 475:21-476:6. Dr. Li also provided only generalized testimony about the

⁹ *Cf. Alexsam, Inc. v. Gap, Inc.*, 621 F. App'x 983, 994-95 (Fed. Cir. 2015) (reversing denial of JMOL of anticipation where evidence corroborating inventor testimony did not show conception of all elements of patent); *Brown*, 276 F.3d at 1335-36 (conception not proven where evidence did not establish conception of every element of claim at issue); *Transocean*, 443 F. Supp. 2d at 856-58 (reasonable fact finder "precluded" from relying on drawings to corroborate inventor testimony of prior conception because they did not disclose every element).

substance of the whiteboard notes, and he did not attempt to identify evidence of conception of each element in those notes. *See id.* at 418:12-419:15, 422:3-11, 423:8-17. Indeed, Dr. Li admitted he had not even attempted to compare the substance of the whiteboard notes with asserted claims of the '015 patent, or even read dependent claims like claim 7. *See id.* at 470:7-472:14.

EMC's expert also failed to identify evidence of conception of every element in the whiteboard notes. Specifically, Mr. Jestice did not identify any evidence of conception in *the whiteboard notes* of the "receiving a data stream comprising a plurality of data segments" element of independent claims 1, 15 and 16. *See* Trial Tr. at 1956:1-16. Nor did he identify any evidence of the confirming "using a relatively high latency memory" element of dependent claim 7. *See id.* at 1962:2-1963:3. Mr. Jestice testified that he only saw evidence of conception of these elements in the April 3, 2002 architectural specification. *See id.* at 1956:8-16, 1963:1-3, 1963:22-1964:6. Because he could not find these elements in the whiteboard photos, Mr. Jestice also did not endorse Dr. Li's claim that conception was complete as of the time the whiteboard notes were created. Instead, Mr. Jestice merely testified that he believed conception was completed by "March 16, 2002," based on his review of the April 3, 2002 version 0.11 specification and his assumption, only supported by Dr. Li's testimony, that the earlier specification would have contained similar information. *See id.* at 1960:15-21, 1964:7-12, 2011:10-2015:20.¹⁰

3. The Sun patent anticipates all asserted claims of the '015 patent.

¹⁰ At trial, EMC did not attempt to argue that Dr. Li's whiteboard photos and architecture specification, by themselves, establish conception of the '015 patent's inventions prior to March 22, 2002. Trial Tr. at 428:18-24. But even if EMC had made such an argument, there is insufficient evidence to support a verdict in EMC's favor based solely on the photos and the specification for the same reasons that those exhibits cannot corroborate Dr. Li's testimony. There is no independent evidence corroborating Dr. Li's testimony concerning the creation of the photos and the underlying notes, or the existence and contents of any pre-Sun patent architecture specification. *See, e.g., Transocean*, 443 F. Supp. 2d at 856 ("[w]hile the [inventor created] drawings themselves do not require corroboration, [the inventor's] testimony that he created the drawings and that he created them before February 8, 1996 does require corroboration."). And the photos do not disclose conception of every element, as discussed above.

Because the jury did not find the Sun patent to be prior art, it did not consider whether the Sun patent discloses all of the elements of the asserted claims of the '015 patent. *See* D.I. 453. But based on the evidence in the record, Pure is entitled to judgment as a matter of law that the Sun patent discloses every element, as no reasonable jury could conclude otherwise.

a. The Sun patent discloses all of the elements of independent claims 1, 15 and 16.

Prof. Zadok presented clear and convincing evidence that the Sun patent is directed to a method for deduplicating data in a storage system, consistent with the '015 patent claims. *See, e.g.*, Trial Tr. at 1361:1-1363:6, 1364:6-11, 1364:24-1365:4; DTX557 at Abstract, 11:30-39. Prof. Zadok also presented clear and convincing evidence that the Sun patent discloses the first element of independent claim 1, “receiving a data stream comprising a plurality of data segments.”¹¹ *See, e.g.*, 1365:5-19; DTX557 at 11:30-39 (“the computer program *receives a stream of data blocks*, including redundant versions of some of the data blocks” (emphasis added)). And Prof. Zadok presented clear and convincing evidence that the Sun patent discloses the second element of claim 1, “assigning an identifier to one of the plurality of data segments[.]” *See, e.g.*, Trial Tr. at 1365:20-1366:22; DTX557 at 2:29-33 (“[w]hen a data block is received, a data block identifier is obtained”) & Fig. 5a. For his part, Mr. Jestice did *not* contest that the Sun patent discloses either the first “receiving a data stream” or second “assigning an identifier” elements. *See* Trial Tr. at 1990:3-17.

Prof. Zadok next provided clear and convincing evidence that the Sun patent discloses the final element of claim 1. The Sun patent discloses “determining whether one of the plurality of data segments has been stored previously.” *See, e.g.*, Trial Tr. at 1367:9-1371:12, 1969:12-1971:2;

¹¹ Pure continues to object to the Court’s construction of “data stream,” as well as the construction of “probabilistic summary” (*see* D.I. 115, 121, 362, and 436), and the Court’s summary judgment ruling that Pure directly infringes claims 1, 7 and 16 of the '015 patent in light of those constructions (*see* D.I. 381 at 15-20) for all the reasons set forth in Pure’s briefing and at hearings. *See* D.I. 92, 252, 332, 335, 405 and 413.

DTX557 at 7:5-14 (“data redundancies are eliminating by determining whether newly received data blocks are redundant”) & Fig. 5a. Applying the Court’s construction for “probabilistic summary,” Prof. Zadok showed that the Sun patent discloses using such a data structure to make the claimed determination. Because the identifiers disclosed in the Sun patent “may not be unique,” the disclosed structure used to determine whether a data segment has been stored can only do so “with possible uncertainty.” *See, e.g.*, Trial Tr. at 1371:13-1375:17; DTX557 at 14:27-33 (“As a *data block identifier may not be unique*, it may occur that two data block identifiers are identical, while the corresponding data blocks contain different information.” (emphasis added)). Prof. Zadok also provided clear and convincing evidence that the Sun patent discloses a “space-efficient” probabilistic summary in the form of a data structure comprised of “data block identifier[s]” and “reference[s] to data block[s],” that requires less space in memory than the underlying data blocks. *See, e.g.*, Trial Tr. at 1375:18-1377:17; DTX557 at Fig. 2, 6:29-32, 7:66-8:11.¹²

With respect to independent claims, Mr. Jestice *only* disputed the Sun patent’s disclosure of the final “determining” element at trial. However, Mr. Jestice’s conclusory testimony—which challenged only two aspects of Prof. Zadok’s analysis—was unsupported by and contrary to the plain language of the Sun patent’s disclosures. *Cf. Krippelz v. Ford Motor Co.*, 667 F.3d 1261, 1268-69 (Fed. Cir. 2012) (reversing denial of JMOL of anticipation and explaining that plaintiff’s expert’s testimony “failed to take into account the entire [prior art] disclosure” and “[h]is general statements that [a limitation] was unmet were therefore too conclusory to sustain the jury’s verdict”). First, Mr. Jestice disputed that the Sun patent discloses determining whether a data segment “has been stored previously,” claiming that the Sun patent relates to memory allocation, not data storage.

¹² Prof. Zadok presented evidence that the Sun patent discloses the similar elements of independent claims 15 and 16, see Trial Tr. at 1398:10-1405:19; DTX557 at 2:28-30, 7:33-37, 12:44-46, Fig. 6 (claim 15), and Trial Tr. at 1405:20-1408:2; DTX557 at 7:33-37 (claim 16). Mr. Jestice did not contest the distinct elements of these claims. *See, e.g.*, Trial Tr. at 1998:11-2000:12.

See Trial Tr. at 1971:3-1972:20. But Mr. Jestice's testimony is contradicted by the disclosures of the Sun patent, which repeatedly discuss determining whether data blocks are redundant or duplicative for purposes of data storage,¹³ as even Mr. Jestice acknowledged on cross-examination:

Q: So clearly that phrase [from DTX557 at 11:30-39] is discussing storing a data block that has been determined not to be redundant; right?

A: *In this section it is definitely talking about storing a data block that has not been redundant*, but the overall patent is about memory allocation.

Id. at 1992:14-20 (emphasis added); *see also id.* at 1991:14-1992:13. Thus, even according to Mr. Jestice, the Sun patent discloses making determinations in the context of storing or not storing duplicative data blocks, just as claimed in the '015 patent. *See Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1332 (Fed. Cir. 2013) (“[A]n admission made by a plaintiff’s witness can be sufficient to support entry of a JMOL in favor of a defendant ... even where the defendant bears the burden of proof on the decided issue.” (internal quotations omitted; alterations in original)).¹⁴

Second, Mr. Jestice disputed that the Sun patent discloses a “space efficient” probabilistic summary.¹⁵ Mr. Jestice claimed that Figure 2 of the Sun patent (which is “a block diagram of a data structure suitable for ... the present invention,” DTX557 at 6:29-32) does not disclose a space efficient data structure because “there’s nothing in the reference that describes how big parts of the

¹³ *See, e.g.*, DTX557 at 10:34-38 (“when there is a redundant data block identifier, redundancy code piece 124 could replace the current data block with a reference to a storage location storing the identical data block”), 11:30-39 (“The sequence of method steps depicted in the embodiment shown in FIG. 5a may advantageously be used to generate a collection of non-redundant data blocks, e.g., for storage on a computer-readable medium Thus, if a data block is not redundant, the data blocks is ... stored [T]he embodiments of the present invention can be used as a filter to store ... data blocks that were not received at an earlier point in time.”).

¹⁴ That the Sun patent may also discuss embodiments for memory allocation purposes, as Mr. Jestice claimed, is legally irrelevant. *See State Contracting & Eng’g Corp. v. Condotte Am., Inc.*, 346 F.3d 1057, 1068 (Fed. Cir. 2003) (“[A] reference may be from an entirely different field of endeavor than that of the claimed invention or may be directed to an entirely different problem from the one addressed by the inventor, yet the reference will still anticipate if it explicitly or inherently discloses every limitation recited in the claims.” (internal quotations and citations omitted)).

¹⁵ At trial, Mr. Jestice conceded that the Sun patent discloses a “probabilistic summary” according to the Court’s construction. *See* Trial Tr. at 1993:13-1994:1.

structures are.” Trial Tr. 1972:21-1973:10. Yet the Sun patent explains that the identifiers may be “a checksum based on the data in the data block” or a “hash code.” DTX557 at 9:13-15, 9:38-40. Mr. Jestice did not testify—nor could he plausibly have testified—that one of ordinary skill would not understand that a “checksum” or “hash code” identifier is smaller and more space efficient than the data it identifies. To the contrary, on cross-examination, Mr. Jestice admitted the identifier for a data segment “is going to be smaller than the entirety of the set of data[.]” Trial Tr. 1996:13-19. Mr. Jestice also did not provide any support for the nonsensical proposition that the other component of the Sun patent’s data structure, the reference to a data block, either alone or in combination with the checksum or hash value identifier, takes up more space than the data it references.

b. The Sun patent discloses all of the elements of dependent claims 2 and 7.

As to the asserted dependent claims of the ’015 patent, Prof. Zadok provided clear and convincing evidence that the Sun patent anticipates dependent claim 2, requiring the derivation of an identifier based on the content of the data segments. *See, e.g.*, Trial Tr. at 1383:23-1386:13; DTX557 at 2:29-33 (“The data block identifier is calculated, for example, based on the data content of the data block.”). Mr. Jestice did not dispute the Sun patent’s disclosure of this element.

Prof. Zadok presented clear and convincing evidence that dependent claim 7 is anticipated by the Sun patent. As Prof. Zadok explained, the Sun patent discloses confirming that a data segment has been stored previously using “relatively high latency memory” by retrieving a previously received data block from relatively high latency secondary storage and then comparing that block with a newly received data block to confirm that they are identical. *See, e.g.*, Trial Tr. at 1387:15-1398:9; DTX557 at 4:27-30, 8:12-19, 14:27-33, Figs. 1 & 8. Although Mr. Jestice purported to contest the Sun patent’s disclosure of using relatively high latency memory, his opinion again was not supported by any evidence or analysis. Mr. Jestice merely stated, counterfactually, that “the Sun

reference does not identify what it's putting specifically on high latency memory." Trial Tr. at 1975:4-20. But the Sun patent states that "one skilled in the art will appreciate that all or part of systems and methods consistent with the present invention may be stored on or read from other computer-readable media, such as secondary storage devices, like hard disks[.]" DTX557 at 8:12-19; *see also* PTX003 at 3:65:4:2. And the Sun patent specifically explains that the relevant data is stored on high latency memory, teaching that its data system "comprises: a secondary storage device having a stored data block with data" and that data blocks may be retrieved from secondary storage. DTX557 at 4:28-30, 13:11-13, 14:62-15:3. Given these disclosures, which Mr. Jestice did not meaningfully address, Mr. Jestice's testimony is too general and conclusory to sustain a jury verdict in EMC's favor. *See Krippelz*, 667 F.3d 1268-69.

B. In the alternative, Pure is entitled to new trial on the issue of whether the Sun patent anticipates and invalidates the '015 patent.

In the alternative to judgment as a matter of law that the '015 patent is anticipated by the Sun patent, the Court should grant Pure a new trial on this issue pursuant to Rules 50(b) and 59 for two independent reasons. *First*, Pure is entitled to a new trial on the issue of whether the Sun patent is prior art because the jury's verdict is against the clear weight of the evidence, for all the reasons discussed above in connection with Pure's request for judgment as a matter of law. *Second*, Pure is entitled to a new trial because the Court committed several substantial, prejudicial legal errors in its admission and rejection of evidence and its instructions to the jury. Specifically, the Court erred in allowing EMC's evidence of prior conception to be presented to the jury, as it failed to pass the legal threshold for corroborated evidence of conception.¹⁶ *See Procter & Gamble*, 566 F.3d at 999;

¹⁶ The Court also erred in not striking Dr. Li's testimony, whiteboard photos PTX9-11, and Mr. Jestice's opinions concerning the whiteboard photos as untimely and prejudicial evidence, and allowing EMC to rely on it in opposition to summary judgment and at trial, for all the reasons set forth in Pure's motion to strike and the December 14, 2015 hearing on that motion. *See* D.I. 303, 324, 345. The prejudice caused by EMC's untimely evidence was compounded by the Court's

Brown, 276 F.3d at 1335; *Purdue Pharma*, 237 F.3d at 1365. This error was compounded by the Court’s refusal to instruct the jury, over Pure’s objection, that proof of conception requires “independent corroborating evidence in addition to [the inventor’s] own statements and documents.” *Procter & Gamble*, 566 F.3d at 999; compare D.I. 448 at 24 (Final Jury Instructions) with D.I. 442 at 26 ([Proposed] Jury Instructions). Failure to instruct the jury on this legal requirement for corroboration was highly prejudicial because, as discussed above, EMC failed to offer *any* evidence to corroborate Dr. Li’s testimony other than his own, unwitnessed documents. Had the jury been instructed that independent evidence was required, the jury likely—and properly—would have concluded that there was insufficient evidence to establish conception prior to the Sun patent and that the Sun patent therefore was prior art. But because the jury was not instructed regarding the legal requirement of independent corroborating evidence, it erroneously concluded that the Sun patent was not prior art and never considered whether the Sun patent anticipated the asserted claims of the ’015 patent.¹⁷

C. Pure is entitled to judgment as a matter of law that Venti anticipates.

Pure provided clear and convincing evidence that Venti disclosed all asserted claims of the ’015 patent and anticipates it pursuant to 35 U.S.C. § 102.¹⁸ Prof. Zadok provided detailed evidence

refusal to permit Pure to introduce into evidence EMC’s interrogatory responses concerning the date of conception of the ’015 patent, *see* DTX926, or to examine Mr. Jestice about his failure to perform a timely investigation of the date of conception of the ’015 patent. *See* Trial Tr. 2005:13-2011:7.

¹⁷ The Court also erred by failing to apprise the jury that EMC had the initial burden at trial of “coming forward with evidence to demonstrate” an invention date before the Sun patent. *See Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 967 (Fed. Cir. 2014). The parties agreed such an instruction was appropriate, but any such instruction was excised from the final version. Compare D.I. 448 at 24 with D.I. 442 at 26.

¹⁸ There is no dispute that the Venti reference is prior art to the ’015 patent, and Prof. Zadok presented uncontroverted testimony and evidence that he was personally present for the reference’s printed publication and presentation at the January 28-30, 2002 FAST Conference, prior to the earliest priority date claimed by EMC. *See, e.g.*, Trial Tr. at 1408:3-1411:11; *see also id.* at 2016:4-7 (Mr. Jestice testifying to his belief that Venti was so disclosed).

and analysis concerning Venti's disclosures of deduplicating data in a storage system, including all elements of the asserted claims. *See, e.g.*, Trial Tr. at 1413:22-1427:12, 1473:24-1483:15; DTX560 at Abstract, Sections 1-5 (PURE.DE00003312-24). Mr. Jestice's brief, conclusory testimony on Venti only purported to dispute the "determining" step of the independent claims and the "confirmation step" of claim 7, leaving Prof. Zadok's clear and convincing testimony on all of the other claim elements completely uncontroverted. *See, e.g.*, Trial Tr. at 1977:11-1981:19 (failing to mention any dispute beyond the "determining" and "confirming" steps).¹⁹ And concerning the "determining" and "confirming" steps, EMC did not present substantial evidence that could support a verdict of validity by a reasonable jury. Mr. Jestice presented only three conclusory arguments with respect to Venti. Those arguments directly contradict Venti's clear disclosures—as well as the Court's construction of probabilistic summary—such that no reasonable jury could credit them.

First, with respect to the determining step, Mr. Jestice argued contrary to the clear, express disclosures of Venti that the undisputed in-memory subset of identifiers in the "Index Cache" therein was not used for data writes. *See* Trial Tr. at 1978:22-1979:22, 2028:7-18. When confronted on cross examination with Venti's clear disclosure of performance figures for the Index Cache *during write operations*, Mr. Jestice simply repeated "it's not used in writes." *See* Trial Tr. at 2030:4-2031:2; *compare* DTX560 at § 5 (indicating performance of "read and write operations" using the "Index Cache" in Table 1). Mr. Jestice failed to give substantial evidence to support the verdict by ignoring or denying this plain disclosure in conclusory fashion. No reasonable juror could credit Mr.

¹⁹ Mr. Jestice did not dispute that the Venti reference discloses the vast majority of the elements of the asserted claims of the '015 patent, and Prof. Zadok provided clear and convincing evidence as to each of the claim elements. *See, e.g.*, Trial Tr. at 1419:23-1422:9 (disclosure of a space-efficient cache and of SHA-1 hashing); DTX560 at Sections 3-5 & Fig. 3 (disclosing the use of a system comprising of a block cache, index cache in memory, as well as an index of fingerprints stored in a relatively high latency, secondary storage medium such as disk); Trial Tr. at 1474:9-1475:4 (claim 2), 1478:17-1481:17 (claim 15), 1481:18-1483:8 (claim 16), 1475:5-1478:16 (claim 7); DTX560 at Fig. 3 (use of "relatively high latency memory" in the confirming step of claim 7).

Jestice’s bare assertion that Venti does not disclose the use of a cache with write operations—which flies in the face of the plain language disclosures on the face of the reference identified by Prof. Zadok. *See, e.g.*, Trial Tr. at 1424:22-1426:11; DTX560 at §§ 3, 5, & Table 1; *Krippelz*, 667 F.3d at 1269 (“the opinions of [an expert] are not a substitute for the actual [reference] disclosure”).²⁰

Second, with respect to the determining step, Mr. Jestice appears to argue with respect to both Venti and Moulton (see below) that SHA-1 hash identifiers are not probabilistic because they supposedly may be considered unique, even though they admittedly are mathematically uncertain and probabilistic. *See, e.g.*, Trial Tr. at 1980:9-22. This testimony is not substantial evidence because it contradicts the clear disclosures and the Court’s construction of probabilistic summary. Mr. Jestice admitted that Venti discloses a “probabilistic hash,” and admitted that using such a hash involved a non-zero possibility of an uncertainty-creating collision. *See id.* at 2023:6-2024:15 (“Q. Now, actually Venti does disclose probabilistic hash, does it not? A. Yeah. Yes. It’s a Sha 1. . . . Q. But you’re not testifying that there’s no disclosure of a possible collision in Venti, right? A. But they do say there’s a possibility. I forget what the numbers are, but it’s extremely high.”). The Court’s claim construction defines a probabilistic summary as producing indications “with possible uncertainty,” and the disclosed hashes of Venti *admittedly* have possible uncertainty. *See* D.I. 436 at 1; Trial Tr. at 2024:16-22 (agreeing the construction “just requires that there be possible uncertainty”). Mr. Jestice’s unsupported invention of an admittedly non-zero possibility that he nevertheless believes not possible *enough* to be considered probabilistic contradicts the Court’s

²⁰ Similarly, Mr. Jestice’s incomplete and out-of-context reference to a passage of Venti, concerning the need to confirm with the full on-disk index when a written block is “new,” see Trial Tr. at 1978:22-1979:22, is not evidence that the system does not *also* first check the in-memory Index Cache to see *if* the block is new. In fact the previous sentence of Venti discloses “hits” in the Index Cache that eliminate the need for a full index lookup—i.e. when the written block is *not* new and is found in the cache. *See* Trial Tr. at 1419:11-1420:22 (explaining the use of caches); DTX560 at PURE.DE00003320. Mr. Jestice’s conclusory testimony merely ignores the clear disclosures of Venti that contradict it. *See, e.g.*, Trial Tr. at 2029:7-2031:2; *cf. Krippelz*, 667 F.3d at 1268-69.

construction, and does not present substantial evidence.²¹

Finally, with respect to the confirming step of claim 7, Mr. Jestice argues in conclusory fashion that Venti does not do a confirming step. *See* Trial Tr. at 1980:23-1981:15. In doing so, Mr. Jestice only discusses Venti's disclosed operation when a matching hash is *found* in the system, pointing to the fact that no further check is done in that case to confirm that the found block is *duplicate*. *See id.* at 1981:3-15, 2042:2-12. But Prof. Zadok testified to Venti's disclosed operation of determining, and then confirming, that a block *is new*, and Mr. Jestice completely ignored that testimony. Specifically, Prof. Zadok identified the disclosure of a preliminary check in the Index Cache to determine whether a block was *new*, followed by a second confirmatory check against the full index on disk if the preliminary check does not match any hash stored in the cache. *See, e.g.*, Trial Tr. at 1475:17-1478:16 ("The caches themselves, they can't necessarily help you when you want to store a new block to Venti because the cache is still going to be small, so you're going to have to look to caches. If you didn't find it there, you're going to have to perform the confirmation with the full index").²² The fact that the Venti system does not confirm a determination that a block is *duplicate* is not substantial evidence to contradict this clear and convincing disclosure of confirming a determination that a block is *new*—which Mr. Jestice ignored and failed to dispute.

²¹ Mr. Jestice assumes without justification that "with possible uncertainty" means that the construction *requires* some uncertainty, and then further draws an unspecified line between uncertainties that are or aren't sufficient in his own view. *See* Trial Tr. at 2024:16-2025:9 ("reasonable possibility or practical possibility"). But the Court has already noted that "the patent claims contemplate *both* conclusive and inconclusive determinations," and crafted its construction "as *allowing*" uncertain conclusions, not *requiring* uncertainty. *See* D.I. 115 at 6 (emphases added); *see also id.* at 5 (construing "determining" using the summary to encompass both conclusive and inconclusive determinations). Mr. Jestice's opinion that "SHA-1 is not probabilistic because the designer considered SHA-1 to be unique," *see* Trial Tr. at 2041:10-2042:1, cannot be reconciled with the Court's claim construction reasoning here. But even if the Court were to agree with EMC and clarify that some non-zero uncertainty was *required*, there is no basis in the patent, the evidence, or Mr. Jestice's conclusory opinion to support a verdict that the admittedly non-zero uncertainty in SHA-1 is somehow *not enough* uncertainty to anticipate.

²² *See also* DTX560 at Fig. 3, PURE.DE00003320 ("Unfortunately, these caches do not speed the process of storing a *new* block to Venti. The server must check that the block is not a duplicate by examining the index.") (emphasis added).

D. Pure is entitled to judgment as matter of law that Moulton anticipates.

Pure established by clear and convincing evidence that the Moulton patent discloses every element and anticipates claims 1, 2, 15, and 16 of the '015 patent under 35 U.S.C. § 102. EMC did not—and could not—contest that the Moulton patent was prior art and discloses the great majority of the elements of claims 1, 2, 15, and 16 of the '015 patent.²³ Rather, Mr. Jestice provided only a few lines of testimony actually explaining his reasons for disputing that Moulton disclosed the “determining” step of the claims. *See* Trial Tr. at 1981:20-1985:8. None of that testimony presented substantial evidence on which a reasonable jury could support a verdict of validity.

For example, Mr. Jestice’s argument that database “212” in Moulton is not space efficient, *see* Trial Tr. at 1983:1-9, fails to present substantial evidence to counter Prof. Zadok’s clear and convincing identification of a completely *different* space-efficient summary structure in Moulton—namely data structure “214,” containing “existing hashes.” *See, e.g.*, Trial Tr. at 1492:13-1493:17, 1494:13-1496:3; DTX556 at Fig. 5. Mr. Jestice failed to provide *any* testimony about data structure 214 to support a verdict that Moulton lacks disclosure of that space-efficient structure.

Mr. Jestice’s argument about the relative probabilities of meteors and hash collisions also fails to provide substantial evidence to support the jury’s verdict of validity, for the same reasons as discussed above with respect to Venti. As Dr. Zadok explained, and Mr. Jestice admitted, Moulton explicitly and admittedly teaches that the disclosed hashing functions, indeed all hashing functions, are “inherently probabilistic.” *See, e.g.*, Trial Tr. at 1493:18-1494:12, 2032:21-2033:3 (“A. That’s

²³ Prof. Zadok testified that the Moulton patent discloses a “commonality factoring system” for use in “a high availability, high reliability data storage system.” *See, e.g.*, Trial Tr. at 1483:21-1486:16; DTX556 at Title, 6:30-35, & Figs. 3, 4. He presented clear and convincing evidence, which Mr. Jestice did not dispute, that Moulton discloses the receiving and assigning steps. *See, e.g.*, Trial Tr. at 1486:17-1491:4; DTX556 at 9:66-10:2, 14:31-44. Although Mr. Jestice attempted to dispute the final “determining” element, Moulton clearly discloses a determining step using a probabilistic and space-efficient summary. *See, e.g.*, Trial Tr. at 1490:20-1496:12; DTX556 at 6:30-50, 14:21-24, & Fig. 5. Mr. Jestice also failed to rebut the clear testimony of Prof. Zadok concerning claims 15 and 16. *See, e.g.*, Trial Tr. at 1490:20-1496:12; DTX556 at 9:55-60, 10:49-53, 16:58-17:5 & Figs. 2, 6.

what it says.”), 2033:14-24 (admitting that Moulton discloses an “inherently probabilistic hash function” with “possible uncertainty in a mathematical sense”). Even if Mr. Jestice and EMC were correct that the Court’s construction somehow *requires* a level of uncertainty, there is no basis in the patent, the evidence, or Mr. Jestice’s opinions to support a verdict of validity here—when Moulton expressly discloses “probabilistic” hashes with a non-zero possibility of collision, *i.e.* possible uncertainty. *See, e.g., id.* at 1493:18-1494:12; DTX556 at 14:21-24.

Mr. Jestice offers no support for his bare, off-point opinion that a skilled artisan would “consider the SHA-1 to be unique,” and such conclusory opinions do not raise substantial evidence to support a verdict.²⁴ *See, e.g., Krippelez*, 667 F.3d at 1268-69. However a person of ordinary skill considered or employed a SHA-1 identifier, the resulting indication admittedly would have inherent “possible uncertainty”—and that would anticipate the asserted claims under the Court’s construction, which does not require uncertainty or distinguish between acceptable levels of possible uncertainty.

In the alternative, the Court should grant Pure a new trial on anticipation by Venti and Moulton pursuant to Rules 50(b) and 59, because the jury’s verdict is against the clear weight of the evidence, for all the reasons discussed above.²⁵

V. CONCLUSION

Pure asks that the Court grant it judgment as a matter of law or, in the alternative, a new trial.

²⁴ Mr. Jestice completely ignores the testimony and clear disclosures of Moulton concerning *other* hash functions besides SHA-1, and did not dispute that the disclosed MD5 algorithm would be probabilistic even under his interpretation. *See, e.g.,* Trial Tr. at 1485:7-1486:4 (Prof. Zadok discussing disclosure of the MD5 hash algorithm in both Moulton and the ’015 patent); DTX556 at Abstract (“industry standard MD4, MD5, SHA or SHA-1 algorithms”); PTX003 (’015 patent) at 3:29-30 (“the MD5 algorithm”). Mr. Jestice limited his conclusory opinion testimony to SHA-1, and failed to provide substantial evidence concerning MD5 identifiers. *See* Trial Tr. at 2033:10-24.

²⁵ In addition, the Court erred in refusing to admit Dr. Li’s, Dr. Patterson’s, and Dr. Miller’s testimony about their understanding of Venti—and in the case of Dr. Patterson, also Moulton—as skilled artisans who were familiar with the reference at the time. *See, e.g.,* Trial Tr. at 437:5-11; 453:13-454:10. They would have testified, for example, to disclosure of another kind of probabilistic uncertainty—arising from the use of a subset of identifiers.

Respectfully submitted,

/s/ David M. Fry

John W. Shaw (No. 3362)

David M. Fry (No. 5486)

SHAW KELLER LLP

300 Delaware Ave., Suite 1120

Wilmington, DE 19801

(302) 298-0700

jshaw@shawkeller.com

dfry@shawkeller.com

Attorneys for Defendant Pure Storage, Inc.

OF COUNSEL:

Robert A. Van Nest

Matthew Werdegarr

R. Adam Lauridsen

Corey Johanningmeier

David Rizk

KEKER & VAN NEST LLP

633 Battery Street

San Francisco, CA 94111

(415) 391-5400

Joseph FitzGerald

PURE STORAGE, INC.

650 Castro Street, Suite 400

Mountain View, CA 94041

(650) 318-6589

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